



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,008	01/29/2004	Brian S. Hilton	117411	2016
25944	7590	11/14/2006	EXAMINER	
OLIFF & BERRIDGE, PLC			GOFF II, JOHN L	
P.O. BOX 19928			ART UNIT	
ALEXANDRIA, VA 22320			PAPER NUMBER	

1733

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/766,008

Applicant(s)

HILTON ET AL.

Examiner

John L. Goff

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 7-9, 12, 13 and 15-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10, 11 and 14 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is in response to the amendment filed on 8/28/06.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-6, 10, 11, and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1, 6, and 14 have been amended to remove “three-dimensional feature” and insert therein - - groove - -. Applicants have not shown where in the specification the broad term “groove” is supported and described. Applicants figures and specification describe in Figures 4B and 6B the three dimensional feature as a circular or non-circular groove which surrounds the at least one aperture, i.e. a recess surrounding and spaced from the aperture. However, there is no support for the broad term “groove” which also includes any recess disposed in the vicinity of the aperture that does not surround the aperture.

Art Unit: 1733

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-6, 10, 11, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 6, and 14 have been amended to remove "three-dimensional feature" and insert therein - - groove - -. It is unclear what is required by a "groove" as the term is only described in the specification in reference to a circular or non-circular groove which surrounds the aperture, i.e. a recess surrounding and spaced from the aperture. However, independent claims 1 and 14 only require a "groove" and applicants amended the dependent claims including the non-elected claims to require a groove is "a circular groove surrounding the at least one aperture", "a circular well surrounding the at least one aperture", "a non-circular groove surrounding the at least one aperture", and "a non-circular well surrounding the at least one aperture". Thus, the examiner has interpreted claims 1 and 14 which require a "groove" to be any of "a circular groove surrounding the at least one aperture", "a circular well surrounding the at least one aperture", "a non-circular groove surrounding the at least one aperture", and "a non-circular well surrounding the at least one aperture" which is consistent and in agreement with applicants amendment.

***Claim Rejections - 35 USC § 102***

7. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Wolcott (U.S. Patent 4,859,378).

Wolcott discloses a method of joining a first thermoplastic object (12 of Figure 1) including a heat stake (14 of Figure 1), i.e. a stake deformable by heat, to a second non-thermoplastic object (16 of Figure 1) including an aperture (18 of Figure 1) and a well (20 of Figure 1), i.e. considered a groove and also a recess not spaced from the aperture, disposed within the vicinity of the aperture with precision alignment comprising assembling, i.e. placing and pressing, the first object and the second object into contact by inserting the heat stake into the aperture (Figure 1) and applying thermally energy to the heat stake so the heat stake deforms and fills the aperture and well to form the deformed stake flush with the surface of the second object (Figure 2) (Column 2, lines 22-51).

Regarding the limitation “applying thermal energy to the at least one heat stake”, it is noted Wolcott deforms the heat stake ultrasonically which applies mechanical energy to the heat stake which then generates heat that is applied to the heat stake and thus, thermal energy is applied to the heat stake to deform the heat stake and the limitation is met.

***Claim Rejections - 35 USC § 103***

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 1733

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietl et al. (U.S. Patent 5,519,425) in view of Wolcott and optionally in view of the admitted prior art (Specification paragraphs 2-9).

Dietl et al. disclose a method of forming an ink cartridge (10 of Figure 2) comprising joining an ink manifold, i.e. fluid container, (12 of Figure 2) including two heat stakes (40 of Figure 2), i.e. stakes deformable by heat, a die module, i.e. fluid ejector, (14 of Figure 2) and a heat sink, i.e. substrate, (24 of Figure 2) including two apertures with precision alignment by assembling, i.e. placing and pressing, the ink manifold, die module, and heat sink into contact by inserting the heat stakes into the apertures (Figure 3) and applying thermal energy to the heat stakes so the heat stakes deform and partially fill the apertures and protrude on the upper surface of the heat sink (Figure 3) (Column 4, lines 32-38 and Column 5, lines 59-67 and Column 6, lines 38-45). Dietl et al. are silent as to the heat sink including two apertures and two grooves. Wolcott is described in full detail above. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include above the two apertures in Dietl et al. two wells, i.e. grooves, as was known in the art of staking as shown by Wolcott such that the stake deforms and fills the apertures and wells during staking with a flush fit at the surface of the heat sink thus allowing for the fabrication of smaller ink cartridges.

Regarding the limitation "applying thermal energy to the at least one heat stake", it is noted Dietl et al. deforms the heat stake ultrasonically which applies mechanical energy to the

Art Unit: 1733

heat stake which then generates heat that is applied to the heat stake and thus, thermal energy is applied to the heat stake to deform the heat stake and the limitation is met. In the event it is shown that heat staking ultrasonically is not "applying thermal energy" the following rejection applies. It would have been obvious to one of ordinary skill in the art at the time the invention was made to deform the stake as taught by Dietl et al. as modified by Wolcott using either of applying deforming heat with a heated staking tool or applying deforming heat ultrasonically as both were well known and functionally equivalent techniques used in the art as optionally shown for example by the admitted prior art wherein only the expected results of deforming the heat stake would be achieved.

The admitted prior art discloses it was well known and conventional in the art of joining an ink manifold and a die module to join by a heated staking tool or ultrasonically (Paragraphs 7 and 9).

10. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietl et al., Wolcott, and optionally the admitted prior art as applied to claims 1-5 and 14 above, and further in view of Ikegami et al. (U.S. Patent 6,460,965).

Dietl et al., Wolcott, and optionally the admitted prior art as applied above teach all of the limitations in claims 10 and 11 except for a teaching of including an elastic member between the ink manifold and die module, it being noted Dietl et al. teach the two are joined by adhesive. It would have been obvious to one of ordinary skill in the art at the time the invention was made to join the ink manifold and die module taught by Dietl et al. as modified by Wolcott, and optionally the admitted prior art by placing an elastic member to form a compression seal therebetween as was known in the art and shown for example by Ikegami et al. to avoid having

Art Unit: 1733

to handle an adhesive and to easily recycle the ink cartridge by being able to disassemble all of the components.

Ikegami et al. disclose a method of forming an ink cartridge comprising joining an ink manifold, i.e. fluid container, (42 of Figure 4), a die module, i.e. fluid ejector, (12 of Figure 4) and a heat sink (40 of Figure 4), wherein the ink manifold and die module are joined with an elastic member (44 of Figure 4) that forms a compression seal therebetween as opposed to joining with adhesive to avoid having to handle the adhesive and to easily recycle the ink cartridge by being able to disassemble all of the components (Column 2, lines 7-40 and Column 4, lines 9-61).

***Allowable Subject Matter***

11. Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

The claims are allowed for the reasons given in paragraph 10 of the office action mailed 6/23/06 with it being further noted “a circular groove surrounding the at least one aperture” requires a circular recess surrounding and spaced from the aperture as depicted in Figure 4B which is not the same as nor does it include “a circular well surrounding the at least one aperture” which requires a circular recess surrounding but not spaced from the aperture as depicted in Figure 5B and known as shown by Wolcott described above.



***Response to Arguments***

13. Applicant's arguments with respect to claims 1-5, 10, 11, and 14 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue, "As agreed during the personal interview, none of the applied references alone or in combination, disclose or suggest a method for joining a fluid container and a fluid injector, and associated fluid container, that includes arranging a fluid container including at least one heat stake, a fluid ejector and a substrate in order, the substrate including at least one aperture and at least a groove disposed in the vicinity of the at least one aperture, as recited in independent claim 1 and similarly recited in independent claims 14 and 15."

It is agreed that claim 6 (corresponding to Figure 4B) is allowable. It was not agreed that the term "groove" alone was supported by the specification nor was it agreed that a "groove" which could be a "a circular well surrounding the at least one aperture" was allowable.

***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

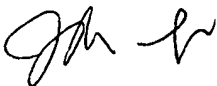
Art Unit: 1733

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

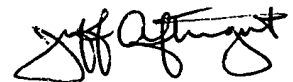
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is (571) 272-1216. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John L. Goff



JEFF H. AFTERGUT  
PRIMARY EXAMINER  
GROUP 1300